edexcel

Examiners' Report/
Principal Examiner Feedback

Summer 2012

GCE Physics (6PH03) Paper 1A & 1B

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications come from Pearson, the world's leading learning company. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk for our BTEC qualifications.
Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

If you have any subject specific questions about this specification that require the help of a subject specialist, you can speak directly to the subject team at Pearson. Their contact details can be found on this link: www.edexcel.com/teachingservices.

You can also use our online Ask the Expert service at www.edexcel.com/ask. You will need an Edexcel username and password to access this service.

Pearson: helping people progress, everywhere
Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

Summer 2012
Publications Code UA032782

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx

Introduction

There are two routes assessment for this module: internal moderation (1A) and external marking (1B). The same assessment criteria are used for each route, and unless otherwise stated the comments below apply to both routes. It is still clear that some centres are not accessing the Edexcel website where the latest forms and guidance are available.
Many candidates showed that they had gained useful skills from their course and produced some excellent work.
The assessment criteria are published and should be made available to all candidates: they should be read in conjunction with this report. For the 1A route, annotation using the marking codes is required. The moderators were pleased to receive helpful notes, including details of internal moderation. For both routes briefing notes should be sent with the scripts.

The report on the visit or case study

This section was the only part where word processing is allowed: not all centres enforce this. Some interesting visits were seen, including a transport museum, and some good case studies on new London buildings. Case studies should not be on the experiment to be carried out but on the application or use of a physics principle. For example, a case study on a building could be followed by the determination of the Young Modulus for a material used in the building.
Whether a case study or a visit is carried out, all references must be acknowledged. Although referencing was generally good, if using a case study three different types of sources must be used rather than three different web pages. The date on which a website was used must be given. Some candidates copied and pasted long extracts from sources without any acknowledgement, their own commentary or discussion: this makes the award of criteria such as using specialist terminology correctly (S5) difficult. Without the inclusion of the briefing notes given to candidates it is not possible for examiners or moderators to know whether or not to award S6.
Despite their placement at the end of the marking grid, the report marks are meant specifically for the summary. The mark for R2 cannot be given when subheadings are only used in sections other than the summary.

Experimental Skills

Some centres continue to use ‘investigations’ rather than the determination of a constant. The best experiments are simple ones, with a clear unambiguous aim, which allow candidates a choice of method and which point to a clear numerical conclusion via a graph in order to give candidates access to the later criteria in the analysis section, in particular A6 and A7.

Planning

The planning should be marked separately from the implementation and analysis: it should be written before the experiment is carried out and the experiment carried out individually. Once a candidate has begun implementation of the experiment, no further planning marks can be given for planning points made from the subsequent work. The plan should include all

relevant equations, details of planned calculations and justify assertions about choice of measuring instruments. Reference should be made to the size of expected quantities and related to the size of the scale division on the instrument to be used.
When commenting on whether repeat readings will be necessary (P9), candidates should support their comment with some reasoning. "I will draw a graph" without further qualification is not sufficient for the award of P11: full details of all data treatment are expected for this criterion.

Implementation and Measurement

In Implementation and Measurement the majority of candidates scored highly. For M1 students are expected to give consistent and realistic numbers of significant figures in their measured values. Some candidates explained in planning that they would make measurements with a metre rule because it had a precision of +/- 0.5 mm and then recorded results only to 0.1 m: they could not then be awarded M1. They are also expected to give repeated values for measurements such as the radius of a wire. Most candidates used units correctly, but not always in the conclusion. At least six sets of measurements are expected.

Analysis

A surprising number of candidates found it difficult to draw a line of best fit, forcing it through favoured points rather than drawing it to represent the overall trend. When describing the trend (A5) candidates should use precise scientific language,: general comments such as a 'positive correlation' do not merit the award of this criterion. Some centres teach uncertainties very well, however, in other centres few examples of percentage uncertainty in even one quantity were seen. Conclusions (A11) did not always match the findings or the aim.

Administrative matters

There are exemplar and guidance materials, and relevant forms on the Edexcel website http://www.edexcel.com/quals/gce/gce08/physics/Pages/default.aspx but it was clear that not all centres had accessed these. Centres are reminded to use the most up-to-date paperwork, which includes record sheets to be signed by the candidate and teacher: this is an Ofqual Code of Practice requirement.

Moderators and examiners were very grateful to those centres that ensured that work for each candidate was written on one side of the page, clearly in three parts, held together by a long treasury tag, named and with pages numbered. Some centres are still using plastic envelopes for candidate work: these are time consuming for moderators and examiners. Details of briefings given to candidates (for both 1A and 1B) and details of internal standardisation (for 1A) should be provided. For the 1A submission route, work must be annotated, preferably with Edexcel codes near where marks are awarded, and incorrect physics marked.

The attention of all centres is drawn to the Ask the Expert and Coursework Consultancy services, both of which are free: details are on the Edexcel website.

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467
Fax 01623 450481
Email publication.orders@edexcel.com

Order Code UA032782 Summer 2012

For more information on Edexcel qualifications, please visit
www.edexcel.com/quals

Pearson Education Limited. Registered company number 872828
with its registered office at Edinburgh Gate, Harlow, Essex CM20 2JE

Ofqual

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Rewarding Learning